Math 10B Name_____

Factoring: Hard Trinomials

Date_____

Factor each completely.

1) $6m^2 + 2m - 8$

2) $3x^2 - 16x + 5$

3) $28r^2 - 116r + 16$

4) $2n^2 - 17n - 9$

5) $3r^2 + 2r - 16$

6) $5a^2 - 34a + 45$

7) $8x^2 - 50x + 50$

8) $4n^2 - 15n + 9$

9) $4x^2 + 17x + 4$

10) $4m^2 + 13m + 10$

11) $4b^2 - 3b - 10$

12) $8n^2 - 26n - 24$

13) $u^2 + 16uv + 64v^2$

14) $2x^2 - 22xy + 48y^2$

15) $x^2 - 11xy + 30y^2$

16) $4a^2 - 8ab - 12b^2$

2) $3x^2 - 16x + 5$ $+15$

$3x^2-15x-x+5$

$3x(x-5)-1(x-5)$

$(x-5)(3x-1)$ $\Rightarrow 3x^2-x-15x+5$

$3x^2-16x+5$

OR

$(3x-1)\left(\frac{3x}{3}-\frac{15}{3}\right)$

$(3x-1)(x-5)$

5) $3r^2 + 2r - 16$ -48

$3r^2+8r-6r-16$

$r(3r+8)-2(3r+8)$

$(3r+8)(r-2)$

11) $4b^2 - 3b - 10$ -40

$\left(\frac{4b}{4}-\frac{8}{4}\right)(4b+5)$

$(b-2)(4b+5)$

8) $4n^2 - 15n + 9$ $+36$

$\left(\frac{4n}{4}-\frac{12}{4}\right)(4n-3)$

$(n-3)(4n-3)$

Pg. 177/178

#13 a, d, h

#15, 17, 18

IV. Difference of Squares:

Conjugate: Same binomials except opposite signs between the terms.

Multiply the conjugates shown below...

$(x+3)(x-3)$ $(5w-4)(5w+4)$ $(4ab-c)(4ab+c)$

$\sqrt{x^2}-\sqrt{9}$

$25w^2+20w-20w-16$

$25w^2-16$

$16a^2b^2+4abc-4abc-c^2$

$16a^2b^2-c^2$

Is there a pattern when a binomial gets multiplied by it's conjugate?

I. Difference of Squares

Criteria...
- two terms that are perfect squares.
- must be a difference
- factor like this...

$$a^2 - b^2 = (a-b)(a+b)$$

EXAMPLES...

1) $81x^2 - 16$

$(9x-4)(9x+4)$

2) $196x^2 - 49$

$49(4x^2-1)$

$49(2x-1)(2x+1)$

$(14x-7)(14x+7)$

$7(2x-1)7(2x+1)$

$49(2x-1)(2x+1)$

3) $8x^2 - 18y^2$

4) $81z^4 - 625$